

CLAIMS

What is claimed is:

-1-

A dendritic polymer conjugate, comprising:
a dendritic polymer conjugated to a platinum containing compound having a therapeutic effect on malignant tumors.

-2-

The dendritic polymer conjugate of claim 1, wherein the dendritic polymer is a dendrimer.

-3-

The dendritic polymer conjugate of claim 1 in which the dendritic polymer which is conjugated to the platinum containing compound includes anionic terminal functional groups.

-4-

The dendritic polymer conjugate of claim 3 in which the anionic functional groups are carboxylic acid functional groups.

-5-

The dendritic polymer conjugate of claim 1, wherein the dendritic polymer is a polyamidoamine dendrimer having carboxylate functional groups.

-6-

The dendritic polymer conjugate of claim 1 in which the dendritic polymer is a polypropylamine having carboxylate functional groups.

-7-

The dendritic polymer conjugate of claim 1 in which the platinum containing compound is a compound comprising a central tetravalent platinum atom bonded to the nitrogen atoms of two amino ligands, which may be the same or different, the amine ligands being in cis confirmation with respect to each other and at least one of the remaining ligand sites is coupled to the dendritic polymer.

-8-

The dendritic polymer conjugate of claim 1 in which the platinum containing compound is cisplatin.

-9-

The dendritic polymer conjugate of claim 2 in which the dendrimer has carboxylate function groups.

-10-

The dendritic polymer conjugate of claim 9 in which the dendritic polymer is a polyamidoamine.

-11-

The dendritic polymer conjugate of claim 9 in which the dendrimer is a polypropylamine.

-12-

The dendritic polymer conjugate of claim 9 in which the platinum containing compound is a compound comprising a central tetravalent platinum atom bonded to the nitrogen atom of two amine ligands, which may be the same or different, the amine ligands being in cis confirmation with respect to each other and at least one of the remaining ligand sites is coupled to the dendritic polymer.

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The dendritic polymer conjugate of claim 9 in which the platinum containing compound is cisplatin.

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The dendritic polymer conjugate of claim 10 in which the platinum containing compound is a compound comprising a central tetravalent platinum atom bonded to the nitrogen atom of two amine ligands, which may be the same or different, the amine ligands being in cis confirmation with respect to each other and at least one of the remaining ligand sites is coupled to the dendritic polymer.

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The dendritic polymer conjugate of claim 10 in which the platinum containing compound is cisplatin.

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The dendritic polymer conjugate of claim 11 in which the platinum containing compound is a compound comprising a central tetravalent platinum atom bonded to the nitrogen atom of two amine ligands, which may be the same or different, the amine ligands being in cis confirmation with respect to each other and at least one of the remaining ligand sites is coupled to the dendritic polymer.

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The dendritic polymer conjugate of claim 11 in which the platinum containing compound is cisplatin.

-18-

The dendritic polymer conjugate of claim 1, wherein the molar ratio of cisplatin to dendritic polymer in the conjugate is from about 100:1 to about 1:1.

-19-

The dendritic polymer conjugate of claim 1, wherein the molar ratio of cisplatin to dendritic polymer in the conjugate is about 35:1.

-20-

A method of preparing a dendritic polymer-platinate, comprising:
providing a dendritic polymer having functional groups which are accessible to a platinum containing compound capable of interacting with the functional groups;
contacting the dendritic polymer with a platinum containing compound; and
reacting the dendritic polymer with the platinum containing compound.

-21-

The method of claim 20, wherein the dendritic polymer is contacted with the platinum containing compound in a solvent.

-22-

The method of claim 21, wherein the solvent is primarily comprised of water.

-23-

The method of claim 20, wherein the dendritic polymer is a dendrimer.

-24-

The method of claim 20, wherein the dendritic polymer has anionic functional groups.

-25-

The method of claim 24, wherein the anionic groups are carboxylate groups.

-26-

The method of claim 20, wherein the dendritic polymer is a polyamidoamine dendrimer.

-27-

The method of claim 20, wherein the dendritic polymer is a polypropylamine.

-28-

The method of claim 20, wherein the platinum containing compound is a compound comprising a central tetravalent platinum atom bonded to the nitrogen atom of two amine ligands, which may be the same or different, the amine ligands being in cis confirmation with respect to each other and at least one of the remaining ligand sites is coupled to the dendritic polymer.

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The method of claim 20, wherein the platinum containing compound is cisplatin.

-30-

The method of claim 20, wherein the molar ratio of cisplatin to dendritic polymer in the conjugate is from about 100:1 to about 1:1.

-31-

The method of claim 20, wherein the molar ratio of cisplatin to dendritic polymer in the conjugate is about 35:1.

-32-

A method for treatment of cancerous tumors in mammals, comprising administering a therapeutically effective quantity of a dendritic polymer-platinate compound to a mammal having a cancerous tumor.

-33-

The method of claim 32, wherein the dendritic polymer is a dendrimer.

-34-

The method of claim 32, wherein the dendritic polymer has anionic functional groups.

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The method of claim 34, wherein the anionic groups are carboxylate groups.

-36-

The method of claim 32, wherein the dendritic polymer is a polyamidoamine dendrimer.

-37-

The method of claim 32, wherein the dendritic polymer is a polypropylamine.

-38-

The method of claim 32, wherein the platinum containing compound is a compound comprising a central tetravalent platinum atom bonded to the nitrogen atom of two amine ligands, which may be the same or different, the amine ligands being in cis confirmation with respect to each other and at least one of the remaining ligand sites is coupled to the dendritic polymer.

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The method of claim 32, wherein the platinum containing compound is cisplatin.

-40-

The method of claim 32, wherein the dendritic polymer-platinate compound is administered parentally.

-41-

The method of claim 32, wherein the dendritic polymer-platinate compound is administered intravenously or intraperitoneally.

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The method of claim 32, wherein the dendritic polymer-platinate compound is administered orally.

-43-

The method of claim 32, wherein the dendritic polymer-platinate compound is administered topically.

-44-

The method of claim 32, wherein the dendritic polymer-platinate compound is administered intraperitoneally.

-45-

The method of claim 32, wherein the molar ratio of cisplatin to dendritic polymer in the conjugate is from about 100:1 to about 1:1.

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The method of claim 32, wherein the molar ratio of cisplatin to dendritic polymer in the conjugate is about 35:1.